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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
KENDALL, CHUCK O	

ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/737,125	MOUNTAIN, HIGHLAND MARY	
	Examiner	Art Unit	
	Chuck O. Kendall	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7 and 9-14* is/are pending in the application.

4a) Of the above claim(s) *1-6,8 and 15-19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7 and 9-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to Application filed 03/15/07.

2. Claims 1-6, 8 and 15 – 19 have been cancelled. Claims 7, 9 – 14 have been amended and are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7 and 9 –12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winsock Direct: The Value of System Area Networks (Jim Pinkerton, Microsoft Corporation, Microsoft Windows 2000 Server, May 2001) referred herein as Pinkerton and further in view of Sun US 2004/0216097.

Claim 7:

Pinkerton discloses a method comprising: encoding a software module to reserve memory space (e.g. "application posts a buffer ...) that allows a network software memory program to bypass a central processing unit to access the memory space, the network software memory program operating according to a remote direct memory access protocol (e.g. Figure 1 and related text).

Pinkerton doesn't expressly disclose wherein when just-in-time (JIT) application code is received in a managed runtime environment (MRTE). However, Sun in an analogous art and similar configuration discloses a MRTE JIT engine that is being implemented to prefetch memory based on dynamic profiling [0108]. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Pinkerton and Sun, because it would enable dynamic profiling as previously suggested by Sun above.

Claim 9:

Pinkerton discloses the method of claim 7 wherein said encoding the software module comprises programming a managed runtime environment to recognize memory space that is accessible by a remote direct memory program (e.g. Figure 1 and related text).

Claim 10:

Pinkerton discloses a computer-readable medium having stored thereon at least one instruction that, when executed by a computer, causes the computer to perform: encoding of a managed run time environment to reserve memory space (e.g. "application posts a buffer ...) for direct access by a remote direct memory program (e.g. Figure 1 and related text).

Pinkerton doesn't expressly disclose including just-in-time (JIT). However, Sun in an analogous art and similar configuration discloses a MRTE JIT engine that is being implemented to prefetch memory based on dynamic profiling [0108]. Therefore it would

have been obvious to one of ordinary skill in the art at the time the invention was made to combine Pinkerton and Sun, because it would make it more dynamic.

Claim 11:

Pinkerton discloses the computer-readable medium of claim 10 wherein the managed runtime environment reserves memory space for direct access by a network software program (e.g. Figure 1 and related text).

Claim 12:

Pinkerton discloses the computer-readable medium of claim 10 wherein the computer-readable medium comprises a storage medium comprising an instruction set configured to provide communication between the managed runtime environment and the remote direct memory program (e.g. Figure 1 and related text).

Claim 15: Pinkerton discloses an article comprising: a storage medium comprising machine-readable instructions stored thereon to encode a managed run time environment to reserve memory space (e.g. "application posts a buffer ...) for direct access by a software development environment (e.g. Figure 1 and related text). Claim 18: Pinkerton discloses the article of claim 15, wherein the storage medium comprises machine-readable instructions stored thereon to encode a software module to reserve memory space (e.g. "application posts a buffer ..,) for direct access by the software development environment (e.g. Figure 1 and related text). Claim 19: Pinkerton discloses

the article of claim 18, wherein the software development environment comprises a remote direct memory access environment (e.g. Figure 1 and related text).

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pinkerton in view of Microsoft Computer Dictionary (Fifth Edition, 2002) in view of Sun US 2004/0216097 A1.

Claim 13:

Pinkerton discloses a system comprising: a processor; a memory coupled to the processor to support the processor operations; a network interface controller interoperating with the processor and the memory for network communications with at least another processor and another network interface controller ("CPU/memory architectures", page 7); a network library accessible by the processor that provides remote direct memory access capabilities; and a storage medium encoded to create a software development environment to reserve memory space for direct access by a remote direct memory program (e.g. Figure 1 and related text), but he does not explicitly disclose a garbage collector to monitor memory usage by at least the processor,

Microsoft Computer Dictionary, page 232, gives a well known definition of garbage collection as a process for automatic recovery of heap memory.

It would have been obvious to implement such a well known garbage collector into Pinkerton's system and/or method in order to free allocated but no longer used

memory as a known desired feature in the art (Microsoft Computer Dictionary definition, page 232).

Pinkerton doesn't expressly disclose wherein when just-in-time (JIT) application code is received in a managed runtime environment (MRTE). However, Sun in an analogous art and similar configuration discloses a MRTE JIT engine that is being implemented to prefetch memory based on dynamic profiling [0108]. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Pinkerton and Sun, because it would make it more dynamic.

Claim 14:

Pinkerton and Microsoft Computer Dictionary, page 232, disclose the system of claim 13, Pinkerton further discloses wherein the storage medium comprises a software module encoded to reserve memory space for direct access by a network software memory program (e.g. Figure 1 and related text).

Response to Arguments

5. Applicant's arguments with respect to claims 7, 9 – 14 have been considered but are moot in view of the new ground(s) of rejection.

Correspondence information

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.

TUAN DAM
SUPERVISORY PATENT EXAMINER